

**REMARKS**

Claims 2, 6, 17-19 and 21-30 are pending in this application. By this Amendment, independent claims 21 and 24 are amended to address the Examiner's objections to these claims and to clarify the subject matter of the claimed invention. No new matter is added by these amendments.

**I. Claim Objections**

Claims 21 and 24 were objected to because of informalities. To address these objections, Applicant has amended claims 21 and 24 to clarify that each of the comparators corresponds to a row of memory cells. For claim 24, Applicant has inserted a comma after the phrase "third electrodes" and inserted the term "the" before the phrase "one second electrode" as requested by the Examiner. For the sake of clarity, Applicant has also reorganized claim 21, namely, moved the paragraph beginning "a plurality of comparators" to the end of the claim. In claim 24, Applicant has corrected a typographical error by replacing of the term "first" with the term "second" in the last paragraph. Applicant has also amended each of the base claims 21 and 24 to recite that the inputs to each comparator are directly connected to the respective electrodes.

Applicant respectfully submits that the foregoing amendments provide sufficient clarification for the two claims objected to by the Office Action. Applicant does not consider the limitation of the first layer in each memory cell to be formed from the same single layer as an essential feature of the invention, and accordingly has not added this feature to the claim. Nonetheless, Applicant respectfully submits that the foregoing amendments provide sufficient clarification of the claimed invention without the introduction of new matter.

## **II. Rejection Under 35 U.S.C. §102(b)**

Claims 2, 21, 22 and 24-28 were rejected under 35 U.S.C. §102(b) over the Bartlett reference (US Patent No. 3,599,185). This rejection is respectfully traversed.

As amended, the claims recite a memory device having a plurality of comparators, each of which has a first input and a second input that are directly connected, respectively, to first and third electrodes. An example of this feature is shown at Fig. 4, in which elements 5, 7 and 8 correspond to the first electrode, third electrode, and comparator, respectively.

Under 35 U.S.C. §102, anticipation requires that each and every element of the claimed invention be disclosed in a prior art reference. *See, e.g., Akzo N.V. v. U.S. Int'l. Trade Comm'n*, 808 F.2d 1471, 1 U.S.P.Q. 1956 (Fed. Cir. 1989). The Bartlett reference cited by the Office Action does not disclose a memory cell having an element of the claimed invention, namely, a comparator having inputs (first and second) that are directly connected to the respective electrodes (first and third) of a memory cell. Because the Bartlett reference does not disclose each and every element of the claims as amended, Applicant respectfully submits the rejection of claims 2, 21, 22 and 24-28 under section 102(b) must be withdrawn.

Further, with respect to the rejection of base claims 21 and 24, Applicant notes that one of the tenets of patent law is that the references cited in a rejection "must be viewed without the benefit of impermissible hindsight vision afforded by the claimed invention." (MPEP § 2141). *Hodosh v. Bleck Drug Co., Inc.*, 786 F.2d 1136, 1143 n.5, 229 USPQ 182, 187 n.5 (Fed. Cir. 1986). In this case, the cited reference does not disclose a comparator having inputs connected to the respective electrodes of a memory cell. The Office Action relies on a theory of inherency for this feature; however, as discussed below, this reliance is misplaced.

As explained in MPEP §706.02, the section entitled "DISTINCTION BETWEEN 35 U.S.C. 102 AND 103," a reference used under 35 U.S.C. §102 "must teach every aspect of the

claimed invention either explicitly or impliedly. Any feature not directly taught must be inherently present." The Examiner asserts that the Bartlett reference inherently comprises a comparator. However, MPEP §2112 states that the Patent Office must provide rationale or evidence tending to show inherency. Citing *In re Robertson*, 169 F.3d 743, 745, 49 USPQd 1949, 150-51 (Fed. Cir. 1990), MPEP §2112 states, "[i]nherency . . . may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient." Additionally, citing *Ex Parte Levy*, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990), §2112 states, "[i]n relying upon the theory of inherency, the Examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art" (emphasis in original). The memory matrix M disclosed in the Bartlett patent does not disclose the element of a comparator connected to the first and third electrodes of a memory cell, and there is no reason to suppose that it must include such an element, as the Office Action has not set forth any basis in fact and/or technical reasoning to show otherwise.

With reference to Fig. 1 of the Bartlett patent, the cited reference discloses a memory cell having a first electrode 18 to which an input voltage  $V_{in}$  is applied and a third electrode 16 having an output voltage  $V_{out}$ . The cited reference indicates the input voltage  $V_{in}$  is constant and does not disclose a comparator having inputs directly connected to the first and third electrodes. Furthermore (see col. 4, lines 13-18) the direction of  $V_{in}$  is such as to create a non-destructive readout. This means that  $V_{in}$  must be opposite to the direction of polarization 22 and is therefore likewise already fixed. Hence there seems to be no reason to "compare"  $V_{out}$  with  $V_{in}$ , since  $V_{in}$  does not appear to change. In contrast, one of the advantages of the claimed invention as noted in the pending application is the use of a comparator to read the memory cell by the direct comparison of the input and output voltages.

This element of the claimed invention allows it to be utilized in a matrix configuration of the type described in the present application without the limitations of the ceramic memory matrix M configuration shown in Fig. 2 of the Bartlett patent.

As a further distinction, the base claims have been amended to include reference to a "direct" connection of the inputs of a comparator to the respective electrodes. This element of the claimed invention is *a fortiori* not disclosed in the cited reference.

For at least the foregoing reasons, and in view of the amendments to base claims 21 and 24 herein, Applicant respectfully submits the rejection of claims 2, 21, 22 and 24-28 under §102(b) as being anticipated by Bartlett must be withdrawn.

### **III. Rejection Under 35 U.S.C. §103(a)**

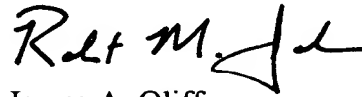
Claims 6, 17-19, 23 and 30 were rejected under 35 U.S.C. §103 as being obvious over Bartlett in view of Adachi et al. ("Adachi"). For the reasons set forth above, the Bartlett reference does not disclose the invention recited in the amended base claims 21 and 24 of the present application. Adachi does not overcome the deficiencies of Bartlett with respect to the base claims. Therefore, dependent claims 6, 17-19, 23 and 30 are allowable for their dependence on an allowable base claim.

### **IV. Conclusion**

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 2, 6, 17-19 and 21-30 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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